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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,983	08/30/2001	Yuri Galperin	EXP.046A	7664

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EXAMINER	
CHENCINSKI, SIEGFRIED E	
ART UNIT	**PAPER NUMBER**
3695	

NOTIFICATION DATE	DELIVERY MODE
04/07/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
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Office Action Summary	Application No.	Applicant(s)	
	09/942,983	GALPERIN ET AL.	
	Examiner	Art Unit	
	SIEGFRIED E. CHENCINSKI	3695	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *158-167* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *158-167* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 39, 2009 has been entered.

Claim Objections

2. Claim 162 is objected to because of the following informalities:
The capital letter "T" appears to be missing after the phrase “accumulated by time” because this claim provides a formula and the phrase is specifying the meaning of the formula’s components.
Claim 158 is objected to because the first time the word application appears in singular form the context suggests a plural form.
Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 158-167 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a concrete asserted utility or a well established utility. Neither the Independently claimed limitations of claims 158 and 163 nor the specification contain information which would lead a single ordinary practitioner or a plurality of practitioners to independently implement the claimed invention or to be able to independently develop the same or repeatable results. The dependent claims 159-

162 and 164-167 Further, the specification does not contain sufficient information for an ordinary practitioner to even use the invention without having to invent various details needed to the invention. Neither the summary of Invention section nor the Detailed Description section contain sufficient details for an ordinary practitioner to successfully implement the invention without adding to the invention through undue experimentation. For example, the variables of applicant's data, loan parameter data and econometric parameters to put into the prepayment score algorithms and the econometric parameters for the econometric model and the analytical prepayment model on pp. 14-15 are not defined. Similarly undefined and possibly related are the "various rate scenarios, and subsequent economic scenarios model fitting processes" and related algorithms (p. 16, [52], ll. 15-16).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 158-167 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a concrete asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

5. Claims 158-167 are also rejected under 35 U.S.C. 112, first paragraph because the best mode contemplated by the inventor has not been disclosed. Evidence of concealment of the best mode is based upon a lack of specific and concrete instructions to the ordinary practitioner for obtaining consistent and repeatable econometric data, a prepayment model historical database and no specific guidance for assembling the variables needed to calculate a prepayment score, including interest

rate scenarios and economic scenarios. The practitioner would have to engage in unreasonable experimentation in an attempt to use the inventions.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 158-167 are also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention (see item 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 158-167 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ervolini et al. (US Pregrant Publication 2002/0035530 A1, hereafter Ervolini) in view of Anderson et al. (US Patent 6,021,202, hereafter Anderson), Baronowski et al. (US Patent 5,926,800, hereafter Baronowski), Traub et al. (US Patent 6,058,377,

hereafter Traub), Culhane (US Patent 6,513,018 B1), Heckerman (US Patent 6,321,225 B1, hereafter Heckerman), Eder (US Patent 6,321,205 B1), Halverson (US Patent 6,301,564 B1) and Official Notice.

Re. Claim 158 & 163, Ergolini discloses a computer system or computer-implemented process that analyzes pools of loans by considering the combination of interest rates and credit quality which drive asset performance or by incorporating financial reporting. The analysis is called credit-driven because the level of prepayment simulated for each asset in the pool is modulated separately over a projection period based on the projected financial performance of the underlying collateral. Prepayments occur when prepayment is permitted and refinancing results in some specified level of net new proceeds. (Abstract, ll. 1-10; p. 1, [0009]-ll. 6-15). Consequently, Ergolini discloses a system for determining prepayment scores representative of prepayment propensity of borrowers for loans, with clam 158 as exemplary, comprising of

- receiving loan data (Fig. 1, 10);
- obtaining and applying a loan prepayment model to the loan data one loan at a time (p. 1, [0004]-ll. 3-4, 12-15; [0007]-ll. 1-5; Fig. 1, 12, 13);
- calculating a prepayment score ([0010]-ll. 1-4 – the projected rate of prepayment over a projection period is a generic score. The ordinary practitioner would have seen it as obvious that this scoring system is on the basis of likelihood expressions such a percent from 0 to 100% or a proxy of this likelihood such as from 0 to 1.00 or x number of dollars per hundred dollars of principal of a loan or a loan bundle.).
- configuration to receive the loan prepayment model and individual loan data and to calculate prepayment scores for each loan application based at least in part upon the loan prepayment model and the prepayment score generation model (factors - [0009]-ll. 1-10);
- prepayment likelihood based on a plurality of variables, one parameter being general interest rates (factors - [0009]-ll. 4-6;. the ordinary practitioner would also have seen it obvious in Ervolini the implication that financial condition of the

borrower may dictate a zero likelihood of prepayment because of being in a default likelihood condition – [0009]-15-24)

Ervolini does not explicitly disclose

- a prepayment model library database comprising loan prepayment models electronically connected to the application parser and configured to receive the loan information, to fit the loan information into at least one loan prepayment model, and to transmit at least one loan prepayment model that matches the loan information; and

However, Baronowski discloses a model library used for evaluating and developing lines of credit (Col. 3, ll. 41-59. The ordinary practitioner would have seen it obvious to make use of a model library for storing loan prepayment likelihood models.).

Heckerman, Halverson and Eder disclose use of a process to generate models for a given type of analysis and then to use a process to identify the model which best fits the data, as follows:

Heckerman discloses that "there are many automated or computerized techniques for model fitting" (Col. 1, ll. 45-46).

Eder discloses the creation of a plurality of models and their application to identify the model which has eh best fit with the data (Col. 27, ll. 36-38; Col. 28, ll. 17-22, 27-30).

Halverson discloses e collection of data and the comparing of the data with a plurality of models to determine the model which bets fits the data (Col. 4, ll. 26-30).

Ervolini does not explicitly disclose

- an application parser electronically connected to the communications server and configured to receive the transmitted loan applications from the communications server and to **parse** the loan applications into at least loan information and applicant information;

However, Anderson discloses the parsing of loan documents and eh transmittal of the results to various parties involved in the lending decision process (Col. 3, l. 64; Col. 4, ll. 50-64; Col. 10, ll. 47-48 The ordinary practitioner would have seen it as obvious to make use of parsing technology to separate loan information from applicant information in an electronic loan application document. Transmitting the parsed results to users would

have been obvious to the ordinary practitioner since the whole purpose of parsing is to prepare information for users to evaluate in some desired manner made feasible or more efficient by the parsing step.).

Ervolini does not explicitly disclose

- a prepayment calculation server comprising a prepayment score generation model electronically connected to the prepayment model library database and configured to receive the loan prepayment model and to calculate prepayment scores for each loan application based at least in part upon the loan prepayment model and the prepayment score generation model, wherein the prepayment calculation server is further adapted to transmit the prepayment scores to any one of the plurality of loan terminals via the network;

However, the use of servers is implicit in the disclosures of Ervolini, Anderson, Baronowski, Traub, Culhane, Heckerman, Eder and Halverson since all computers act as servers in these kinds of system. Further, the ordinary practitioner would have seen it as obvious to combine the disclosures of Ervolini, Baronowski, Traub, Culhane, Heckerman, Eder and Halverson for the purpose of constructing a prepayment calculation server comprising a prepayment score generation model electronically connected to the prepayment model library database and configured to receive the loan prepayment model and to calculate prepayment scores for each loan application based at least in part upon the loan prepayment model and the prepayment score generation model, wherein the prepayment calculation server is further adapted to transmit the prepayment scores to any one of the plurality of loan terminals via the network.

Ervolini does not explicitly disclose

- a communications server connected via a network to a plurality of loan terminals configured to accept and transmit loan application, wherein the communications server is configured to receive transmitted loan applications;
- wherein the plurality of loan terminals are adapted to use the prepayment scores to adjust loan terms.

However, communicating of the results of a prepayment score to the users of this information for the determination of loan application decisions by lenders is implicit in Ervolini and would have been obvious to the ordinary practitioner.

Ervolini does not explicitly disclose

- wherein the prepayment score is calculated from the formula:

Score : = Sum (base T) of TP(T)

where T represents time and P represents prepayment;

However, the examiner takes Official Notice that it was well known at the time of Applicant's invention to make use of such summation formulas (See below).

Regarding claim 163, use of computer processors and computer executable instructions to create a system for determining prepayment scores representative of prepayment propensity of borrowers for loans would have been obvious to the ordinary practitioner.

Therefore, it would have been obvious to an ordinary practitioner at the time of Applicant's invention to have combined the disclosures of Ervolini, Anderson, Baronowski, Traub, Culhane, Heckerman, Eder, Halverson and Official Notice with his own knowledge in order to create a system for determining prepayment scores representative of prepayment propensity of borrowers for loans, motivated by a desire to identify and use tailored characteristics as part of a generic model to fine tune the predictive capability of a score for each particular performance receiver which may differ among such receivers in the generic database (Culhane, Col. 2, ll. 34-40).

Re. Claim 159 & 164, Ergolini does not explicitly disclose wherein the prepayment model library database further comprises:

a model training server configured to create the loan prepayment models for the prepayment model library database; and

prepayment historical data connected to the model training server, the prepayment historical data further comprises prepayment statistics regarding loans of various types.

However, Baronowski, Heckerman, Eder and Halverson, a cited in the rejection of claims 158 and 163, would have made it obvious to the ordinary practitioner of the art wherein the prepayment model library database further would comprise a model training server configured to create the loan prepayment models for the prepayment model

library database; and prepayment historical data connected to the model training server, the prepayment historical data further comprises prepayment statistics regarding loans of various types. Therefore, it would have been obvious to an ordinary practitioner at the time of Applicant's invention to have combined the disclosures of Ervolini, Anderson, Baronowski, Traub, Culhane, Heckerman, Eder, Halverson and Official Notice with his own knowledge in order to create a system for determining prepayment scores representative of prepayment propensity of borrowers for loans including the use of a model training server and prepayment historical data, motivated by a desire to identify and use tailored characteristics as part of a generic model to fine tune the predictive capability of a score for each particular performance receiver which may differ among such receivers in the generic database (Culhane, Col. 2, ll. 34-40).

Re. Claim 160 & 165, Ergolini does not explictly disclose wherein the prepayment calculation server further comprises an econometric model that generates Low Discrepancy Sequence (LDS)-based scenarios of econometric parameters for input to the prepayment calculation server. However, Traub discloses the use of LDS based scenarios of financially related data (Col. 6, l. 19). Inclusion of the projection and evaluation of the prospective impact of future interest rates in a prepayment analysis would have made it obvious to the ordinary practitioner to evaluate econometric data known to impact interest rates. Therefore, it would have been obvious to an ordinary practitioner at the time of Applicant's invention to have combined the disclosures of Ervolini, Anderson, Baronowski, Traub, Culhane, Heckerman, Eder, Halverson and Official Notice with his own knowledge in order to create a system for determining prepayment scores representative of prepayment propensity of borrowers for loans including the evaluation of econometric data, motivated by a desire to identify and use tailored characteristics as part of a generic model to fine tune the predictive capability of a score for each particular performance receiver which may differ among such receivers in the generic database (Culhane, Col. 2, ll. 34-40).

Re. Claim 161 & 166, none of Ervolini, Anderson, Baronowski, Traub, Culhane, Heckerman, Eder or Halverson disclose wherein total prepayment at time T is calculated from the formula:

P(T) = (1/S)sum (S=1 to S)P(sub s)(T)
where S represents the number of scenarios and P represents the prepayment amount for a given scenario.
However, the examiner takes Official Notice that it was well known at the time of Applicant's invention to make use of such a summation formula. Therefore, it would have been obvious to an ordinary practitioner at the time of Applicant's invention to have combined the disclosures of Ervolini, Anderson, Baronowski, Traub, Culhane, Heckerman, Eder, Halverson and Official Notice with his own knowledge in order to create a system for determining prepayment scores representative of prepayment propensity of borrowers for loans including the use of a summation algorithm to calculate total prepayment at time, motivated by a desire to identify and use tailored characteristics as part of a generic model to fine tune the predictive capability of a score for each particular performance receiver which may differ among such receivers in the generic database (Culhane, Col. 2, ll. 34-40).
Re. Claim 162 & 167, Ergolini wherein the total prepayment, accumulated by time, in scenario s is calculated from the formula:
Psub s(T) = Pi(i)psub s(tsubs)
where p(t) is a prepayment value.
However, the examiner takes Official Notice that it was well known at the time of Applicant's invention to make use of such a summation formula. Therefore, it would have been obvious to an ordinary practitioner at the time of Applicant's invention to have combined the disclosures of Ervolini, Anderson, Baronowski, Traub, Culhane, Heckerman, Eder, Halverson and Official Notice with his own knowledge in order to create a system for determining prepayment scores representative of prepayment propensity of borrowers for loans including the use of a summation algorithm to calculate total prepayment at time, motivated by a desire to identify and use tailored characteristics as part of a generic model to fine tune the predictive capability of a score for each particular performance receiver which may differ among such receivers in the generic database (Culhane, Col. 2, ll. 34-40).

Re. Official Notice for Claims 158, 161, 162, 166 and 167, the three summation algorithms were well known at the time of Applicant's invention. For example, where

Score : = Sum (base T) of TP(T)

where T represents time and P represents prepayment.

A summation series of data points, such as a time series, was well known at the time of Applicant's invention.

Response to Arguments

8. Applicant's arguments filed March 9, 2009 have been fully considered but they are moot in view of the new grounds of rejection.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Siegfried Chencinski whose telephone number is (571)272-6792. The Examiner can normally be reached Monday through Friday, 9am to 6pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Charles Kyle, can be reached on (571) 272-6746.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington D.C. 20231

or Faxed to (571*)273-8300* [Official communications; including After Final communications labeled "Box AF"]

or Faxed to *(571) 273*-6792 [Informal/Draft communications, labeled "PROPOSED" or "DRAFT"]

Hand delivered responses should be brought to the address found on the above USPTO web site in Alexandria, VA.

SEC
March 28, 2009

/Narayanswamy Subramanian/
Primary Examiner, Art Unit 3695